AMENDMENTS TO THE CLAIMS

1. (Currently amended) An information reproduction method for reproducing contents of an information recording medium that has at least one data zone for storing data, comprising:

a boundary determination step for determining whether information about a boundary between the recorded zone and the non-recorded zone has been obtained; and

a non-recorded zone determination step, performed when the boundary determination step determines that the information about the boundary has not been obtained, for determining whether the entirety of a reproduction zone is a recorded zone wherein data are stored, or whether at least a part of the reproduction zone is a non-recorded zone wherein no data are stored at a predetermined timing when or after a request for reproduction (reproduction request) is received, the reproduction zone having contents which are requested to be reproduced by the reproduction request, and being included in the data zone of the information recording medium.

2. (Original) The information reproduction method as claimed in claim 1, wherein the predetermined timing is set at a point in time when the reproduction request is received.

3. (Original) The reproduction method as claimed in claim 2, further comprising:

an error processing step for outputting error information without reproducing the non-recorded zone when the non-recorded zone is determined to be present in the reproduction zone at the non-recorded zone determination step.

4. (Original) The reproduction method as claimed in claim 1, wherein the predetermined timing is set at a point in time when reproduction data are not obtained normally while reproducing the reproduction zone.

5. (Original) The reproduction method as claimed in claim 4, further comprising:

an error processing step for outputting error information without retrying reproduction of the non-recorded zone when the non-recorded zone is determined to be present in the reproduction zone at the non-recorded zone determination step.

6. (Canceled)

7. (Currently amended) The reproduction method as claimed in claim 1, further comprising:

a boundary setting step;

wherein a start address of the non-recorded zone of the reproduction zone is made into the address of the boundary between the recorded zone and the non-recorded zone when the non-recorded zone is determined to be present in the reproduction zone at the non-recorded zone determination step, and when the start address of the non-recorded zone differs from the start address of the reproduction zone.

8. (Original) The reproduction method as claimed in claim 1, further comprising:

a confirmed non-recorded zone updating step wherein a start address of a zone that has been confirmed as a non-recorded zone (confirmed non-recorded zone) is updated if a start address of a non-recorded zone of the reproduction zone is less than the start address of the confirmed non-recorded zone.

9. (Original) The reproduction method as claimed in claim 8, further comprising:

a confirmed non-recorded zone determination step for determining whether at least a part of the reproduction zone is included in the confirmed non-recorded zone, which step is performed in advance of the non-recorded zone determination step; and

an error setting step for outputting error information without reproducing the zone included in the confirmed non-recorded zone when at least a part of the reproduction zone is

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determined to be included in the confirmed non-recorded zone at the confirmed non-recorded zone determination step.

10. (Original) The reproduction method as claimed in claim 1, further comprising:

a confirmed recorded zone updating step;

wherein an end address of a zone that has been confirmed as a recorded zone (confirmed recorded zone) is updated if an end address of the reproduction zone, reproduction of which has been normally performed, is greater than the ending address of the confirmed recorded zone.

11. (Currently amended) The reproduction method as claimed in claim 10, further comprising:

a confirmed recorded zone determination step for determining whether the entirety of the reproduction zone is contained in the confirmed recorded zone, the confirmed recorded zone determination step being performed in advance of the non-recorded zone determination step, and the non-recorded zone determination step is performed only when at least a part of the reproduction zone is determined not to be contained in the confirmed recorded zone at the confirmed recorded zone determination step.

12. (Original) The reproduction method as claimed in claim 1, further comprising:

a confirmed non-recorded zone updating step wherein a start address of a zone that has been confirmed as a non-recorded zone (confirmed non-recorded zone) is updated if the non-recorded zone determination step determines that a non-recorded zone is present in the reproduction zone, and if a start address of the non-recorded zone is less than the start address of the confirmed non-recorded zone;

a confirmed recorded zone updating step wherein an end address of a zone that has been confirmed as a recorded zone (confirmed recorded zone) is updated if an end address of the reproduction zone, reproduction of which has been normally performed, is greater than the ending address of the confirmed recorded zone; and

a boundary defining step that is performed if the start address of the confirmed non-recorded zone is the same as the end address of the confirmed recorded zone, wherein the address of the boundary of the recorded zone and the non-recorded zone is defined by the same address.

13. (Currently amended) A <u>computer-readable recording medium that stores a</u> program for <u>causing</u> a control computer of a drive apparatus<u>, that is</u> ~~to execute, the drive apparatus being~~ capable of at least reproducing data stored in an information recording medium that has at least one data zone for storing data, <u>to execute</u>~~which drive apparatus does not have to be, but may also be capable of writing and erasing data, comprising~~:

a read command monitoring step for monitoring a request for reproduction of a zone (reproduction zone) of the data zone of the information recording medium; ~~and~~

<u>a boundary determination step for determining whether information about a boundary between the recorded zone and the non-recorded zone has been obtained; and</u>

a non-recorded zone determination step<u>, performed when the boundary determination step determines that the information about the boundary has not been obtained,</u> for determining whether the entirety of the reproduction zone is a recorded-zone wherein data are stored, or at least a part of the reproduction zone is a non-recorded zone wherein no data are stored at a predetermined timing when or after the request for reproduction (reproduction request) is received.

14. (Currently amended) The ~~program~~ <u>computer-readable recording medium</u> as claimed in claim 13, wherein the predetermined timing is set at a point in time when the reproduction request is received.

15. (Currently amended) The ~~program~~ <u>computer-readable recording medium</u> as claimed in claim 14, <u>wherein the program</u> further<u> causes the control computer to execute</u> ~~comprising~~:

a step for outputting error information without reproducing the non-recorded zone when the non-recorded zone is determined to be present in the reproduction zone at the non-recorded zone determination step.

16. (Currently amended) The ~~program~~ computer-readable recording medium as claimed in claim 13, wherein the timing is a point in time when reproduction data are not obtained normally while reproducing the reproduction zone.

17. (Currently amended) The ~~program~~ computer-readable recording medium as claimed in claim 16, wherein the program further causes the control computer to execute ~~comprising~~:

a step for outputting error information without retrying reproduction of the non-recorded zone when the non-recorded zone is determined to be present in the reproduction zone at the non-recorded zone determination step.

18. (Canceled)

19. (Currently amended) The ~~program~~ computer-readable recording medium as claimed in claim 13, wherein the program further causes the control computer to execute ~~comprising~~:

a boundary setting step for making the start address of the non-recorded zone of the reproduction zone into the address of the boundary between the recorded zone and the non-recorded zone if the non-recorded zone is determined to be present in the reproduction zone at the non-recorded zone determination step, and if the start address of the non-recorded zone differs from the start address of the reproduction zone.

20. (Currently amended) The ~~program~~ computer-readable recording medium as claimed in claim 13, wherein the program further causes the control computer to execute ~~comprising~~:

a confirmed non-recorded zone updating step for updating the start address of a zone that has been confirmed as a non-recorded zone (confirmed non-recorded zone) if the start address of the non-recorded zone of the reproduction zone is less than the start address of the confirmed non-recorded zone.

21. (Currently amended) The ~~program~~ computer-readable recording medium as claimed in claim 20, wherein the program further causes the control computer to execute ~~comprising~~:

a confirmed non-recorded zone determination step for determining whether at least a part of the reproduction zone is included in the confirmed non-recorded zone, which step being performed in advance of the non-recorded zone determination step; and

a step for outputting error information without reproducing the zone included in the confirmed non-recorded zone when at least a part of the reproduction zone is determined to be included in the confirmed non-recorded zone at the confirmed non-recorded zone determination step.

22. (Currently amended) The ~~program~~ computer-readable recording medium as claimed in claim 13, wherein the program further causes the control computer to execute ~~comprising~~:

a step for updating an end address of a zone that has been confirmed as a recorded zone (confirmed recorded zone) if an end address of the reproduction zone, reproduction of which has been normally performed, is greater than the ending address of the confirmed recorded zone.

23. (Currently amended) The ~~program~~ computer-readable recording medium as claimed in claim 22, wherein the program further causes the control computer to execute ~~comprising~~:

a confirmed recorded zone determination step for determining whether the entirety of the reproduction zone is contained in the confirmed recorded zone, the confirmed recorded zone determination step being performed in advance of the non-recorded zone determination step, and the non-recorded zone determination step is performed only when at least a part of the reproduction zone is determined not to be contained in the confirmed recorded zone at the confirmed recorded zone determination step.

24. (Currently amended) The ~~program~~ computer-readable recording medium as claimed in claim 13, wherein the program further causes the control computer to execute ~~comprising~~:

a confirmed non-recorded zone updating step wherein a start address of a zone that has been confirmed as a non-recorded zone (confirmed non-recorded zone) is updated if a start address of a non-recorded zone of the reproduction zone is less than the start address of the confirmed non-recorded zone;

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a confirmed recorded zone updating step wherein an end address of a zone that has been

confirmed as a recorded zone (confirmed recorded zone) is updated if an end address of the

reproduction zone, reproduction of which has been normally performed, is greater than the ending

address of the confirmed recorded zone; and

a boundary defining step that is performed if the start address of the confirmed non-

recorded zone is the same as the end address of the confirmed recorded zone, wherein the address of

the boundary of the recorded zone and the non-recorded zone is defined by the same address.

25. (Canceled)

26. (Currently amended) A drive apparatus capable of at least reproducing data by

irradiating a light beam to an information recording medium that has at least one data zone for

storing data, ~~which drive apparatus does not have to be, but may also be capable of writing and
erasing data,~~ comprising:

a boundary determination means for determining whether the information about the

boundary between the recorded zone where the date in are recorded;

a non-recorded zone determination means, when the boundary determination means

determines that the information about the boundary has not been obtained, for determining whether

data are recorded in the entirety of a reproduction zone, contents of which are requested for

reproduction (reproduction request), or the reproduction zone contains a non-recorded zone where

data are not recorded, the reproduction zone being included in the data zone of the information

recording medium, and the non-recorded zone determination being carried out at a predetermined

timing on or after a point in time when the reproduction request is received;

an optical pickup apparatus for receiving the light irradiated to and reflected from the

information recording medium; and

a processing apparatus for at least reproducing data using an output signal of the optical

pickup apparatus, which processing apparatus does not have to be, but may also be capable of

writing and erasing data.

27. (Original) The drive apparatus as claimed in claim 26, wherein the predetermined timing is set at a point in time when the reproduction request is received.

28. (Currently amended) The drive apparatus as claimed in claim 27, further comprising:

an error setting means for outputting error information without reproducing the non-recorded zone when the non-recorded zone is determined to be present in the reproduction zone by the non-recorded zone determination means.

29. (Currently amended) The drive apparatus as claimed in claim 26, further comprising:

an error monitoring means for monitoring a reproduction error occurring during reproduction performed by the processing apparatus, and the predetermined timing is set at a point in time when a reproduction error is detected by the error monitoring means.

30. (Currently amended) The drive apparatus as claimed in claim 29, further comprising:

an error processing means for outputting error information without retrying reproduction of the non-recorded zone when the non-recorded zone is determined to be present in the reproduction zone by the non-recorded zone determination means.

31. (Canceled)

32. (Currently amended) The drive apparatus as claimed in claim 26, further comprising:

a boundary setting means for making the start address of the non-recorded zone of the reproduction zone into the boundary address between the recorded zone where the data are recorded, and the non-recorded zone where data are not recorded, when the non-recorded zone determination means determines that the non-recorded zone is present in the reproduction zone, and

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when the start address of the non-recorded zone differs from the start address of the reproduction zone in the reproduction zone.

33. (Currently amended) The drive apparatus as claimed in claim 26, further comprising:

a confirmed non-recorded zone memory unit for storing information about a data zone that has been confirmed as a non-recorded zone (confirmed non-recorded zone); and

a confirmed non-recorded zone updating means for updating the information about the confirmed non-recorded zone stored in the confirmed non-recorded zone memory if the non-recorded zone determination means determines that the non-recorded zone is present in the reproduction zone, and if the start address of the non-recorded zone of the reproduction zone is less than the start address of the confirmed non-recorded zone stored in the confirmed non-recorded zone memory.

34. (Currently amended) The drive apparatus as claimed in claim 33, further comprising:

a confirmed non-recorded zone determination means for determining whether at least a part of the reproduction zone belongs to the confirmed non-recorded zone based on the information about the confirmed non-recorded zone stored in the confirmed non-recorded zone memory; and

an error setting means for outputting error information without reproducing the zone that is determined to belong to the confirmed non-recorded zone by the confirmed non-recorded zone determination means.

35. (Original) The drive apparatus as claimed in claim 33, wherein two or more data zones are formed on the recording surface of the information recording medium, and the information about the confirmed non-recorded zone for each data zone is stored in the confirmed non-recorded zone memory.

36. (Currently amended) The drive apparatus as claimed in claim 26, further comprising

a confirmed recorded zone memory for storing information about a zone that has been confirmed as a recorded zone; and

a confirmed recorded zone updating means for updating the information about the confirmed recorded zone stored in the confirmed recorded zone memory if the ending address of a zone, reproduction of which is normally performed, of the reproduction zone is greater than the ending address of the confirmed recorded zone stored in the confirmed recorded zone memory.

37. (Currently amended) The drive apparatus as claimed in claim 36, further comprising:

a confirmed recorded zone determination means for determining whether the entirety of the reproduction zones is included in the confirmed recorded zone based on the information about the confirmed recorded zone stored in confirmed recorded zone memory, wherein the non-recorded zone determination step is performed by the non-recorded zone determination means only when the confirmed recorded zone determination means determines that at least a part of the reproduction zone is not included in the confirmed recorded zone.

38. (Original) The drive apparatus as claimed in claim 36, wherein two or more data zones are formed on the recording surface of the information recording medium, and the information about the confirmed recorded zone for each data zone is stored in the confirmed recorded zone memory.

39. (Currently amended) The drive apparatus as claimed in claim 26, further comprising:

a confirmed zone memory for storing address information of the data zone, comprising the start address of the confirmed non-recorded zone where it is already confirmed that data are not recorded, and the ending address of the confirmed recorded zone where it is already confirmed that data are recorded;

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a confirmed non-recorded zone updating means for updating the start address of the confirmed non-recorded zone stored in the confirmed zone confirmed zone memory if the non-recorded zone determination means determines that the non-recorded zone is present in the reproduction zone, and if the start address of the non-recorded zone of the reproduction zone is less than the start address of the confirmed non-recorded zone stored in the confirmed zone memory;

a confirmed recorded zone updating means for updating the ending address of the confirmed recorded zone stored in the confirmed zone memory when the ending address of the zone, reproduction of which is normally performed, is greater than the ending address of the confirmed recorded zone stored in the confirmed zone memory; and

a boundary defining means for defining the boundary address of the recorded zone where the data in the data zone are recorded, and the non-recorded zone where data are not recorded, if the start address of the confirmed non-recorded zone and the ending address of the confirmed recorded zone are the same, by the same address.

40. (Original) The drive apparatus as claimed in claim 39, wherein two or more data zones are formed on the recording surface of the information recording medium, and the address information of each data zone is stored in the confirmed zone memory.

41. (Original) The drive apparatus as claimed in claim 26, wherein the information recording medium is capable of storing additional information, but does not allow rewriting of data.

42. (Original) The drive apparatus as claimed in claim 41, wherein the information recording medium is an information recording medium based on the specification of DVD+R.